and although various reformers advocated the adoption of the metric system in the U.S. in the 19th century, there were always numerous obstacles to the success of the system. Kidwell discusses some of these, as well as the many ways in which knowledge of the metric system entered the schools.

From Calculus to Computers is one of a growing number of recent books to give teachers at various levels concrete ideas for incorporating the history of mathematics into their teaching. Unfortunately, like most of its predecessors, the book itself only presents anecdotal evidence about the success of such teaching. Although the authors of the articles here—like the authors in similar books and even the author of this review—believe strongly that incorporating history improves students' learning of mathematics, this notion will only make a difference beyond the classrooms of believers when serious research studies are able to demonstrate a positive effect. I hope that some readers of this book will be motivated not only to try out some of the wonderful ideas included in it, but also to conduct some educational research to demonstrate that using the history of mathematics, whether that of ancient times or of the past 200 years, will increase our students' ability to learn mathematics.

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Mathematics and the Historian's Craft: The Kenneth O. May Lectures
Edited by Glen Van Brummelen and Michael Kinyon. New York (Springer-Verlag). 2005. ISBN 0-387-25284-3. 357 pp. $89.95

The essays collected in this volume are based on keynote lectures given at annual meetings of the Canadian Society for History and Philosophy of Mathematics (CSHPM/SCHPM). Since at the time of writing I am the president of the CSHPM, I should perhaps begin this review by acknowledging an apparent conflict of interest. However, although the book was edited by a past president and a former *Proceedings* editor of the society, the CSHPM had no official role in its publication. It was in fact published by the Canadian Mathematical Society and Springer, in the *CMS Books in Mathematics* series.

Readers of this review are necessarily familiar with the legacy of Kenneth O. May, since he was the founding editor of this journal. He established *Historia Mathematica* as a newsletter in 1972 and brought out the first issue of the journal of the same name in 1974. It was during the same two-year period that he played midwife to the birth of the CSHPM, which was officially established at a meeting held at Queen's University in 1973 and held its first annual meeting the following year. Shortly afterwards, in 1977, Ken May passed away at the tragically young age of 62. In his honor, the CSHPM established the Kenneth O. May Fund to assist in bringing invited speakers to its annual meetings.

In 1988 the Society began producing *Proceedings* of the talks given at these meetings, published by the Society but distributed to members only. On the 25th anniversary of May's death, the keynote address given each year was rechristened the "Kenneth O. May Lecture." *Mathematics and the Historian's Craft* brings together 12 excellent May Lectures, taken from the pages of the CSHPM *Proceedings* between the years 1990 and 2003, along with an introductory chapter on May's life and the current state of the North American community of historians of mathematics by CSHPM archivist Amy Shell-Gellasch. Six of the articles in this volume have never been available to nonmembers before, although the others have appeared elsewhere: two in the *American Mathematical Monthly*, two in other journals, and two as chapters in books.

The scholarly quality of the articles in this collection is uniformly excellent. This should come as no surprise, since the authors were all invited speakers at a major scholarly meeting. Nevertheless, most of the material is accessible to a wide mathematical audience and the engaging quality of the writing makes for excellent reading. The book would make a welcome addition to any academic library and could certainly be used as a resource for undergraduate research projects.

The editors have provided a great breadth of material in this collection. Chronologically, the span ranges from the classical, with Alexander Jones's essay on Ptolemy's mathematical models, to the 20th century, with Stuart Shankar's piece on Turing and the origins of artificial intelligence. The majority of the articles are internalist, but there are some exceptions, for example, a paper on mathematics in Canada before 1945 by Tom Archibald and Louis Charbonneau, and one on the emergence of the American mathematical research community by Karen Hunger Parshall, both from the 1994 meeting focusing on mathematics in North America. Additionally, the collection opens with Ivor Grattan-Guinness's essay "History or Heritage," with important pedagogical implications, and closes with a sociological study by Ann Hibner Koblitz entitled "Mathematics and Gender."

If there is any shortcoming in the selection of topics that were available for this volume, it is the shortage of premodern mathematics. In fact, the medieval period is entirely unrepresented, although the CSHPM righted that wrong with Len Berggren's 2005 May Lecture "Currents and counter-currents in the history of mathematics in medieval Islam," sadly too late to make it into this book. Grattan-Guinness does discuss the legacy of classical mathematics in our time, but otherwise Jones's piece on Ptolemy is the only one set before 1600. This engaging essay considers an intriguing question in both the history and philosophy of astronomy, namely to what extent Ptolemy's complex celestial models represented his real view of physical nature.

There are three papers from the early modern period: Jim Bennett's discussion of "Mathematics, Instruments and Navigation: 1600–1800," Judith Grabiner's examination of the Continental influence of MacLaurin's *Treatise on Fluxions*, and Rüdiger Thiele's mathematical biography of Leonhard Euler. Bennett's piece is a broad overview of major developments in the science of navigation with implications for the history of mathematics, including magnetic variation, altitude measurement, and the longitude problem. Thiele's piece is particularly timely given Euler's tercentenary in 2007, especially as his book on Euler [Thiele, 1982] has never been translated into English. Grabiner's essay is one of the more provocative pieces in the volume, challenging the "standard picture" of 18th-century British mathematics as a dead end, a picture that the author herself helped to propagate in her book [Grabiner, 1981].

The 19th and early 20th centuries are equally well represented, with papers by Volker Peckhaus about 19th-century logic and Joseph W. Dauben on Cantorian set theory. There is also a second paper by Rüdiger Thiele, as he was the keynote speaker in both 1997 and 2000. His talk "Hilbert and His Twenty-Four Problems" was given at the second of these. Whereas most keynote talks to this and other academic societies are summative and provide a survey of a large body of well-established results, this paper contained something of a bombshell: Thiele's discovery that Hilbert had originally planned to list 24 problems at the Paris ICM in 1900 instead of 23. The 24th problem, which Hilbert dropped at some point before the Paris meeting, was to "develop a theory of the method of proof in mathematics in general" (p. 280). Thiele's paper in the 2000 CSHPM *Proceedings* seems to have been the first appearance anywhere in print of any mention of this problem. He spoke about the same topic at the January 2001 Joint Mathematics Meeting in New Orleans and published an abbreviated version of this paper in the *American Mathematical Monthly* [Thiele, 2003]. That version of the paper won Thiele the Mathematical Association of America's Ford Prize in 2004. The original paper, richly illustrated and providing engaging looks into Hilbert's correspondence and notebooks, is one of the highlights of *Mathematics and the Historian's Craft*.

Ken May believed that "the best history requires sensitivity to both mathematical and historical issues, a respect for good practice of the crafts of both the historian and the mathematician" [May, 1975, 453]. From Grattan-Guinness's careful delineation of history and heritage and his assessment of the benefits of each, to Koblitz's critical comparison

of the historical record versus the received wisdom on matters of gender, and with every article in between, sensitivity and respect are in evidence throughout this collection.

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